

lated to that species than to *D. crassifolia* Grah. or even to *D. stenoloba* Ledeb. I agree, therefore, with Mr. Clokey, that it must be considered to be of specific rank and regard it as having evolved in this isolated southern mountain range. Perhaps the most striking thing about the species is its remarkable constancy. Mr. Clokey has collected many individuals and they are all as nearly alike as plants can reasonably be expected to be. Incidentally, the same can be said for the other species peculiar to this region, namely, *D. Jaegeri* Munz & Johnston, although it has been collected so much less frequently that the assertion is made with less assurance.

The reason for according *Draba paucifructus* specific rank can best be seen by comparing it (Table 1) with the three species with which it is most likely to be confused.

From the above comparison it may be seen that *Draba paucifructus* is perhaps most closely related to *D. nivalis* and it seems not unlikely that it is really a stranded relative of that species, differing chiefly in the shorter fruits and in the much less abundant, coarser pubescence on the leaves.

The other species, represented by three collections from Rainbow Falls, Charleston Mountains, *Clokey 7111, 7951, and 8202*, is *Draba brachystylis* Rydberg (Bull. Torr. Bot. Club 29: 240. 1902). Since *D. brachystylis* has been known hitherto only from the Wasatch Mountains of Utah (collections from American Fork Canyon, Alta, and Thistle, by M. E. Jones, and from Big Cottonwood Canyon, *Rydberg & Carlton 6417 and Garrett 1336*) its discovery in the Charleston Mountains is indeed surprising; however, there can be little doubt of its identity since the collections made by Clokey are practically identical with that of Rydberg and Carlton.

University of Washington,
Seattle, December 8, 1938.

NOTES ON CERTAIN CRUCIFERAE OF MEXICO AND SOUTHWESTERN UNITED STATES

REED C. ROLLINS¹

A series of specimens from Mexico recently referred to me for determination by Dr. I. M. Johnston, served to call my attention to the need for critical study in two rather poorly known genera of the Cruciferae. After a superficial examination, it soon became evident that a complete study of both genera would be necessary before they could be clearly understood and the plants placed with some certainty. The genera involved are *Nerisyrenia*, more familiarly known as *Greggia* of Gray, and *Synthlipsis*. Both are small genera of the western hemisphere and have a rather

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limited distribution in southwestern United States and north-eastern Mexico. Much of the previous work on these genera has been done at the Gray Herbarium, hence the types and annotated or critical specimens have been readily available for study. Specimens cited throughout this paper are deposited in the Gray Herbarium unless otherwise specifically designated.

Nerisyrenia and *Synthlipsis* are closely related and it was at first thought that together they might form a sufficiently homogeneous group to be treated as a single genus. However, the following tabulation of their distinctive characteristics effectively demonstrates the generic nature of each.

NERISYRENIA: cotyledons incumbent; seeds numerous (more than 40 in each silique), less than 1 mm. broad; siliques with rounded margins; capitate stigma cylindrical; petals dilated and sparsely denticulate at base.

SYNTHLIPSIS: cotyledons accumbent; seeds less than 25 in each silique, ca. 2 mm. broad; siliques carinate; capitate stigma discoid; petals entire and not dilated at base.

Nerisyrenia was first recognized as a distinct genus by Gray, who named it *Greggia* in honor of Dr. Josiah Gregg. At the time he was fully aware of, and even mentioned, the earlier *Greggia* of Engelmann pointing out that Engelmann's plant had proved to be a *Cowania*. Thus Gray fell into a situation which, after the acceptance of our present "later homonym rule," made rejection of the name of his proposal mandatory upon later workers. The genus has three species, one of which has been examined for the purpose of determining the number of chromosomes present. A collection of *Nerisyrenia camporum* was made in Big Bend State Park, Brewster County, Texas, on September 6, 1938, *Rollins & Chambers 2767*. An examination of developing pollen after acetocarmen staining showed the number to be $N = 7$.

NERISYRENIA

Nerisyrenia Greene, *Pittonia* 4: 225. 1900.

Greggia Gray, *Smiths. Contrib. (Pl. Wright.)* 3: 7. 1855; not *Greggia* Gaertn., *Fruct.* 1: 168. 1788; not *Greggia* Engelmann in *Wisliz., Mem. Tour No. Mex.* 114. 1848.

Parrasia Greene, *Erythea* 3: 75. 1895, based on *Greggia* Gray; not *Parrasia* Rafin. *Fl. Tellur.* 3: 78. 1837.

KEY TO THE SPECIES

Siliques entire at apex, densely pubescent but never white, 1.5-3 mm. wide; plants densely pubescent but not hoary.

Leaves spatulate to oblanceolate, dentate to repand, infrequently entire, 4-15 mm. wide, siliques slightly compressed contrary to partition

1. *N. camporum*

Leaves narrowly linear, entire, less than 3 mm. wide, siliques terete

2. *N. linearifolia*

Siliques notched at apex, incanous, 3-5 mm. wide; plants hoary throughout

3. *N. incana*

1. *NERISYRENIA CAMPORUM* (Gray) Greene, *Pittonia* 4: 225. 1900.

Greggia camporum Gray, *Smiths. Contrib. (Pl. Wright.)* 3: 7. 1855.

Greggia camporum Gray var. *angustifolia* Coulter, *Contrib. U. S. Nat. Herb.* 1: 31. 1890.

Parrasia camporum (Gray) Greene, *Erythea* 3: 75. 1895, based on *Greggia camporum* Gray.

Representative specimens. TEXAS. W. Texas—El Paso, Oct. 1849, *C. Wright 11* (Gray, type). Brewster County: Big Bend State Park, Sept. 1938, *Rollins & Chambers 2767*; 3 miles below Study Butte, June 1931, *Moore & Steyermark 3247*; near Persimmon Gap, April 1931, *McKelvey 1972*. Maverick County: hills near Eagle Pass, April 1900, *Pringle 9038*. Presidio County: near Shafter, April 1931, *McKelvey 2045*. LaSalle County: Cotulla, March 1917, *E. J. Palmer 11304*. Val Verde County: Del Rio, Feb. 1937, *Cory 21025*. El Paso County: El Paso, May 1881, *Lemmon 113*. Reeves County: July 1928, *Cory 1626*. Ward County: Barstow, April 1902, *Tracy & Earle 25*. NEW MEXICO. Without locality, 1852, *C. Wright 1316*; plains south of Lunas Well, July 1897, *Wooton*. Lincoln County: White Mts., July 1897, *Wooton 176*. Otero County: Alamogordo, April 1902, *Rehn & Viereck*. Grant County: upper corner monument, May 1892, *Mearns 8*. MEXICO. NUEVO LEON: Monterey, March 1880, *E. Palmer 47*. COAHUILA: Saltillo, July 1880, *E. Palmer 2145*; 24 miles west of Saltillo, Sept. 1938, *Johnston 7668*; valley west from Melville Station, Sept. 1938, *Johnston 7329*; 70 miles southwest of Parras, May 1880, *E. Palmer 27*; 55 miles west of Saltillo, Sept. 1938, *Johnston 7696*; 3 miles south of Peña, Sept. 1938, *Johnston 7727*; 9 miles east of Cuatro Ciénegas, Aug. 1938, *Johnston 7104*; 1 mile south of Hermanas, Aug. 1938, *Johnston 7067*; 16 miles south of Laguna del Rey, Sept. 1938, *Johnston 7814*. DURANGO: 2 miles west of Bermejillo, Sept. 1938, *Johnston 7753*; 14 miles west of Mapimi, Sept. 1938, *Johnston 7758*. CHIHUAHUA: 5 miles south of Jimenez, Sept. 1938, *Johnston 7845*.

Nerisyrenia camporum varies widely in width and degree of entirety of its leaves. A broadly spatulate-repand leaf appears to be the most prevalent type, but entire rather narrow leaves are not uncommon. Plants with the latter type were designated variety *angustifolia* by Coulter, but this form shows no geographic continuity and cannot, in my opinion, be justifiably maintained as a taxonomic entity. Plants with relatively narrow, entire or nearly entire leaves have been collected from such widely separated localities as Barstow, El Paso and Rio Grande in Texas, Alamogordo in New Mexico and Laguna del Rey in Coahuila, Mexico. These localities circumscribe much of the area occupied by the typical form of the species. The narrow-leaved forms of *N. camporum* are not to be confused with *N. linearifolia* which is

an amply distinct natural species. *Nerisyrenia linearifolia* in addition to the distinctive very narrow entire foliage has numerous slender stems which seldom reach more than a decimeter in length, slender cylindrical siliques and a more scanty pubescence throughout the entire plant than any forms of *N. camporum*.

2. *NERISYRENIA LINEARIFOLIA* (Watson) Greene, *Pittonia* 4: 225. 1900.

Greggia linearifolia Watson, *Proc. Am. Acad.* 18: 191. 1883.

Greggia camporum Gray var. *linearifolia*, M. E. Jones, *Proc. Calif. Acad.* 5: 625. 1895.

Parrasia linearifolia Greene, *Erythea* 3: 75. 1895, based on *G. linearifolia* Watson.

Dr. Johnston reports that all his collections of this species from Mexico were obtained on gypsaceous soil and that the plant species associated with it were the same in a remarkable number of instances.

Representative specimens. TEXAS. Bluffs of Delaware Creek, 1882, *V. Havard* (Gray, type); Rio Grande, 1848, *Wright*. NEW MEXICO. White Sands, Doña Ana County, July 1897, *Wooton 158*; Fort Sumner-Roswell, May 1931, *A. Nelson 11311*. MEXICO. COAHUILA: Parras, April 1880, *E. Palmer 46*; 6 miles north of La Ventura, Sept. 1938, *Johnston 7638*. SAN LUIS POTOSI: 2 miles south of Cedral, Sept. 1938, *Johnston 7583*; 6 miles north of San Vicente, Sept. 1938, *Johnston 7616*; 38 miles south of Matehuala, Sept. 1938, *Johnston 7509*. ZACATECAS: Sierra Hermosa, Sept. 1938, *Johnston 7402*.

3. *Nerisyrenia incana* sp. nov.

Herba perennis suffruticosa incana; caulibus a basi ramosis 1-2 dm. longis; foliis spathulatis vel obovatis integris 1-4 cm. longis, 5-15 mm. latis; inflorescentiis racemosis laxis; sepalis oblongis cano-pubescentibus 4-6 mm. longis, ca. 2 mm. latis; petalis albis obovatis e basi dilatatis 9-11 mm. longis, 3-5 mm. latis; pedicellis divaricatis vel reflexis 4-7 mm. longis; siliquis oblongis retusis cano-pubescentibus 7-10 mm. longis, 3-5 mm. latis; stylo 2-3 mm. longo; seminibus alatis ca. 1 mm. latis.

Suffruticose perennial, incanous throughout with a dense covering of intricately branched trichomes; stems several to numerous, branching from base, 1-2 dm. high, simple or branched above, older stems with slightly furrowed grey bark, younger stems white, the furrowing imperceptible; strictly basal leaves absent; cauline spatulate to obovate, obtuse, petiolate, entire or very rarely obscurely dentate, 1-4 cm. long, 5-15 mm. broad; inflorescence racemose, rather lax; sepals densely pubescent, oblong, somewhat involute, 4-6 mm. long, ca. 2 mm. wide; petals white, obovate, markedly dilated at base with a few small teeth on the margin, 9-11 mm. long, 3-5 mm. broad; pedicels rather

stout, white, divaricate to somewhat reflexed, 4–7 mm. long; siliques oblong, apex notched, somewhat compressed contrary to septum, densely whitish pubescent, 7–10 mm. long, 3–5 mm. wide; style 2–3 mm. long; seeds brown, wingless, less than 1 mm. broad, more than 50 in each silique.

MEXICO. Infrequent in alkaline flats, associated with *Dondia*, 4 miles west of Cuatro Ciénegas, Coahuila, Aug. 24–26, 1938, *I. M. Johnston 7130* (Gray, type).

Nerisyrenia incana is most nearly related to *N. camporum* from which it differs in having a dense covering of white trichomes, entire smaller spatulate leaves and short broad siliques which are markedly notched at the apex. The two species are easily recognized as distinct on morphological grounds alone, but their habitat is also vastly different. *Nerisyrenia incana* grows in soil which is strongly alkaline. In this respect it is certainly unique in the genus and possibly in the family as well. *Nerisyrenia camporum*, on the other hand, is less selective and occurs in a variety of soil-types. *Nerisyrenia incana* is known only from the type collection, but this is adequate in every way and includes both flowers and fruits.

SYNTHLIPSIS

Synthlipsis Gray, Mem. Am. Acad. ser. 2, 4: 116. 1849.

1a. SYNTHLIPSIS GREGGII Gray var. *typica* nom. nov.

Representative specimens. TEXAS. Maverick County: Eagle Pass, April 1931, *M. E. Jones 28078*; Rio Grande Valley near Eagle Pass, April 1900, *Pringle 8329*. Webb County: Laredo, March 1903, *Reverchon 3726*. Hidalgo County: 3 miles south of San Manual, Jan. 1937, *H. B. Parks 21002*; 5 miles north of Mission, March 1936, *H. B. Parks 18002*. MEXICO. CHIHUAHUA: pass between Chilicote Station and Las Animas, Sept. 1938, *Johnston 7996*. SAN LUIS POTOSI: region of San Luis Potosi, 1878, *Parry & Palmer 18*; 49 miles northeast of San Luis Potosi, Sept. 1938, *Johnston 7504*. COAHUILA: valley near Saltillo, Jan. 1847, *Gregg* (Gray, type); Saltillo, May 1898, *E. Palmer 175*; Parras, June 1880, *E. Palmer 45*. TAMAULPAS: San Fernando-Jimenez, Feb. 1902, *E. W. Nelson 6609*. HIDALGO: Ixmiquilpan, July 1905, *Rose et al. 8914*.

1b. SYNTHLIPSIS GREGGII var. *hispidula* var. nov.

Siliques hispidis; reple obovato vel oblongo.—San Miguelito Mountains, San Luis Potosi, Mexico, 1878, *J. G. Schaffner 149* (Gray, type).

Siliques hispid with rough stalked trichomes; replum shorter and broader than in var. *typica*.

SPECIES EXCLUDED FROM SYNTHLIPSIS

Synthlipsis lepidota Rose, Contrib. U. S. Nat. Herb. 8: 294. 1905 = *Lesquerella argentea* (Schauer) Watson, Proc. Am. Acad.

23: 252. 1888 (See Payson, Ann. Mo. Bot. Gard. 8: 140. 1921).

Synthlipsis Berlandieri Gray, Bot. Mex. Bound. Surv. 34. 1859 = *Lesquerella lasiocarpa* (Hook.) Watson, var. *Berlandieri* (Gray) Payson, *op. cit.* 139.

Synthlipsis Berlandieri Gray, var. *hispida* Watson, Proc. Am. Acad. 17: 321. 1882 = *Lesquerella lasiocarpa* (Hook.) Watson.

Synthlipsis heterochroma Watson, *l. c.* = *Lesquerella lasiocarpa* (Hook.) Watson.

STANLEYELLA

Stanleyella Rydb., Bull. Torr. Bot. Club 34: 432. 1904.

Stanleyella texana (Cory) comb. nov.

The plant described by Cory as *Sisymbrium texanum* (Rhodora 39: 418. 1937) is not a member of that genus. Rather it must be referred to the genus *Stanleyella* which up to now has been monotypic. *Stanleyella texana* differs from members of *Sisymbrium* in having accumbent cotyledons, reflexed or spreading sepals at anthesis, very slender petals which are not effectively differentiated into blade and claw, filaments of nearly equal length which exceed the long petals, nectar glands almost equally developed under all filaments and a congested inflorescence and fruiting raceme. The following specimens not cited by Cory belong to this species. TEXAS. Brewster County: Terlingua Creek, northeast of Agua Fria, April 1936, *Cory* (Gray); north of Terlingua, April 1938, *Warnock 309* (U. S. Nat. Herb.); near Hot Springs, March 1938, *Sperry 1288* (U. S. Nat. Herb.).

Gray Herbarium, Harvard University,
February 14, 1939.

REVIEW

The Flowering Plants and Ferns of Mount Rainier. By GEORGE NEVILLE JONES. University of Washington Publications in Biology. Volume VII. Pp. 1-192 with 9 plates. University of Washington, Seattle, 1938. Price \$1.75, obtainable from the Publications Editor.

A thoroughly worthy companion volume to his excellent "Botanical Survey of the Olympic Peninsula," the present work gives a detailed picture of the flora of the Mount Rainier section of the Cascade Range. The book is intended for amateur as well as professional botanists, and is provided with concise and readily usable keys to the families, genera, species and varieties. Each of these entities is, in turn, equipped with a skeleton description and an indication of habitat and life zone preference. The all too brief introduction affords an analysis of the flora, by application of the Raunkiaer spectrum combined with the life zone hypothesis. No comparison is offered of the Olympic and